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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/910,329

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Jung-Lin Pan

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3627

24374

7590

02/01/2005

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EXAMINER

NGUYEN, HANH N

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s) OK	
	09/910,329	PAN ET AL.	
	Examiner	Art Unit	
	Hanh Nguyen	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,9-14,18-23,27-29,33,34,36 and 38-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,9-14,18-23,27-29,33,34,36 and 38-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 9, 10, 11, 13, 14, 18, 19, 20, 22, 23, 27, 28, 29, 33, 34, 36, 38 are rejected under 35 USC 103(a) as being unpatentable over Papadopoulos et al. (Pat. 5594720) in view of Zeira et al.(pat.6714523 B2).

*Regarding claim 1, 10, 18, 19, 28, 29, 33, 34, 36 and 38, Papadopoulos et al. discloses determining potentially interfering ones of the other cells (cell 610, fig.6) which potentially interfere with the particular cell (cell 600, fig.6) (see col.8, lines 5-15 & col.9, lines 44-47& col.9, lines 55-58); for each timeslot (uplink slot 606, fig.6), eliminate that timeslot (slot 606) for uplink communication, if first ones of the potentially interfering ones uses that timeslot for downlink communications(see col.8, lines 5-20); assigning a timeslot to an uplink communication of the particular cell using non-uplink elimination timeslots (allocating a slot in portion 856, fig.9B for uplink, see col.10, lines 42-48); and assigning a timeslot to a downlink communication of the particular cell to the at least one user using non-downlink eliminated timeslots (allocating a slot in portion 856, fig.9B for downlink, col.10, lines 42-48). The system inherently forms an availability list because the system knows which cells are potentially interfering cells (see col.9, lines 44-58, col.10, lines 48 to col.11, line 24). Papadopoulos et al. does not disclose for each timeslot, eliminate that timeslot for downlink communication for at

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least one user, if a dynamic interference measurement in that timeslot exceeds a predetermined threshold.

Zeira et al. discloses a hybrid time division multiple access TDMA/CDMA system such as time division duplex TDD/CDMA system (col.1, lines 32-45, claim 18). The system teaches for each timeslot, eliminate that timeslot for downlink communication for at least one user, if a dynamic interference measurement in that timeslot exceeds a predetermined threshold (col.8, lines 45-55 & col.6, lines 37-45). Therefore, it would have been obvious to one ordinary skilled in the art to apply the teaching of Zeira et al. into Papadopoulos et al. in order to eliminate a downlink slot when the dynamic interference measurement in the slot exceeds a predetermined threshold and to reassignment from a pool of unused slots another slot with lower interference level to improve signal quality.

Regarding to claims 9 and 27, Papadopoulos et al. discloses a shared time division duplex system (see col.5, lines 10-15), but fails to teach that the system is a time division duplex system. Zeira et al. discloses the system is a time division duplex (see col.1, lines 32-40). Therefore, it would have been obvious to one of ordinary skilled in the art to modify the shared TDD system of Papadopoulos et al into Time Division Duplex system by using the Time division Duplex system of Zeira in order to send users links in selected slots using selected CDMA codes.

Regarding to claims 2, 4, 5, 11, 13, 14, 20, 22, 23, Papadopoulos et al. teaches that the interference could be base station to base station interference or user equipment to user equipment interference (the interference could be either regular "CCI" or "mixed CCI"; (column 8, lines 31-43).

Claim 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papadopoulos et al. (Pat. 5594720).

Regarding to claim 39, Papadopoulos et al. fails to teach a memory for storing an availability list. The system of Papadopoulos et al. inherently forms an availability list because the system knows which cells are potential interfering cells (column 9, lines 44-58; column 10, line 48 to column 11, line 24). It would have been obvious to one of ordinary skilled in the art to modify the teaching of Papadopoulos et al. so that it teaches a memory for storing an availability list because such an arrangement would enable the memory to be periodically changed as conditions warrant.

Regarding to claim 40, Papadopoulos et al. fails to teach a timeslot controller for updating at least a portion of the availability list and a memory for storing the at least a portion. It would have been obvious to one of ordinary skilled in the art to modify the invention of Papadopoulos et al. so that it teaches a timeslot controller for updating at least a portion of the availability list and a memory for storing the at least a portion because such an arrangement would enable the system to maintain updated data concerning interfering cells even when the mobile stations move from one cells to another.

Regarding to claim 41, Papadopoulos et al. fails to teach that the at least a portion is the entire availability list. It would have been obvious to one of ordinary skilled in the art to modify the invention of Papadopoulos et al. so that it teaches that the at least a portion is the entire availability list because such an arrangement would enable the system to maintain updated data concerning interfering cells even when the mobile stations move from one cells to another.

Regarding to claim 42, Papadopoulos et al. fails to teach that the at least a portion is

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only information from the availability list pertaining to the particular cell. It would have been obvious to one of ordinary skilled in the art to modify the invention of Papadopoulos et al. so that it teaches that the at least a portion is only information from the availability list pertaining to the particular cell because such an arrangement would reduce the amotmt of memory required for the availability list.

Claims 3, 12, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papadopoulos et al. in view of Zeira et al., and further in view of Leung (Pat..

Regarding to claim 3, 12, and 21, Papadopoulos et al. fails to teach that link gains are used to determine which cells are base station to base station interfering cells. Leung teaches the use of link gains to minimize co-channel interference nmong neighboring cells (abstract; introduction). It would have been obvious to onne of ordinary skilled in the art to modify the teaching of Papadopoulos et al. so that link gains are used to determine which cells are base station to base station interfering cells, as suggested by Leung, because such an arrangement would enable the system to make use of link gains to memsure interference.

Response to Arguments

Applicant's arguments with respect to claims 1-5, 9-14, 18-23, 27-29, 33, 34, 36 and 38-42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Advidor et al.(Pat.6144652) and Zeira et al.(Pat.6791961 B2) are cited to show the state of art..

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday from 8AM to 5PM. The examiner can also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'HNguyen', with a stylized flourish at the end.

HANH NGUYEN
PRIMARY EXAMINER